

ROGINSKIY, V. N.

"Application of Contactless Components in Control Circuits of Automatic Telephone Exchanges," by V. N. Roginskiy, Elektosvyaz, No 2, Feb 57, pp 47-56

The article describes research and development of electronic automatic telephone exchanges in the USSR and abroad.

In 1955 in Leningrad at one of the automatic telephone exchanges there was tested, under actual operating conditions, a thyatron register which is considered one of the most complicated components of an electronic exchange.

The article does not draw any conclusions as to the practical feasibility of this component for an electronic automatic telephone exchange.
(U)

54 M. 1322

ROGINSKIY, V.N., kandidat tekhnicheskikh nauk.

Noncontact automatic telephone systems. Vest.sviazi 17 no.2:30-32
F '57. (MLRA 10:3)
(Telephone, Automatic)

PA - 2461

AUTHOR

TITLE

PERIODICAL

ABSTRACT

ROGINSKIY V.N.

New Types of Telephone Relay-Substations.

(Ryeleynaya tyelefoannaya podstantsiya novogo tipa. Russian.)
Vestnik Akademii Nauk 1957 Vol 27, Nr 1, PP 52-54 (U.S.S.R.)
Received: V/1957

Reviewed: V/1957

The construction of telephone systems is to a great extent a question of expense because the cable connections are very expensive, to build. One of the main tasks of the special laboratory of the Academy of Science of the USSR is the development of scientific methods for the optimum construction of telephone systems and of the corresponding schemes. Studies on the development of group - systems were carried out under the supervision of A.D. Kharchev, for the purpose of achieving a minimum of material expenditure. The main characteristic of a system is its number of selectors. Therefore the problem is to build a central exchange with a minimum of selectors (Examples and two schemes are inserted here). The analysis of various systems revealed that the most suitable method is constituted by the technique of by-pass selection, which is represented by the fixing of the selected number in a register, whereupon the required subscriber is traced by a special apparatus and finally one of the free

CARD 1/ 3

New Types of Telephone Relay-Substations. PA - 2461
(Ryeleynaya tyelefonnaya podstantsiya novogo tipa)

selectors receives an order to establish the connection. V.G. Lazaryev developed a special method for the installation of small stations with a minimum of relays and material expenditure. According to calculations, carried out at the Moscow Institute for tele-communications, the installation of such sub - stations seems to be most advantageous, if the distance from the sub - station to the principal exchange does not exceed 1 km. The introduction of these stations would permit a 40 % saving of cables.

During 1956 the industry received orders to begin the construction of such stations. In the meantime, however, the development of a new system of connection (with coordinate selectors) of the crossbar type was introduced which consists of a multiple-relay apparatus and establishes connections with the assistance of two magnets arranged in a coordinate - like position. Thereby, 100 relays can be replaced by one selector with 20 magnets (10 for every coordinate). There exchange of relays by such systems of connections in relay sub-stations permits the further reduction of costs of equipment. The plant

CARD 2/3

AUTHOR ROGINSKIY, V.N., PA - 3024
 TITLE Equivalent Transformations of Relay Circuits of Class P.
 (Ravnosil'nyye prebrazovaniya releynykh skhem klassa P - Russian)
 PERIODICAL Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 2, pp 328-331. (U.S.S.R.)
 Received 6/1957 Reviewed 7/1957
 ABSTRACT The present paper discusses the principles of the transformations of the relay schemes of the class P, which lead over to schemes of equilibrium. The application of these transformations extend the domain of the synthesizable schemes, makes possible the composition of mixed systems and specially the simplification of the schemes consisting of several relays. The latter case is thus computed that each contact if possible has an effect on as many relays possible. As distinguished from the contacts with the two extreme values 0 and 1 of conductivity the elements G (coillings, resistances) have a finitely large conductivity, that is to say $0 < G < 1$ is valid. Then the idea of "order of conductivity" is introduced, it characterizes the influence of conductivity of G on the work of the relay A. If the conductivity of the element G connected in series with A impairs the amperage in the coilling to such an extent that the relay does not react and if the connecting in parallel of the same conductivity does not prevent the work of the relay, the order of the conductivity of G is to be smaller than the order of the conductivity of A. This is here expressed by the symbol $G < A$. The conductivity of larger order ($G > A$) is defined in a similar way. A few properties following from these definitions are named .

Card 1/2

Equivalent Transformations of Relay Circuits of Class P. PA - 3024

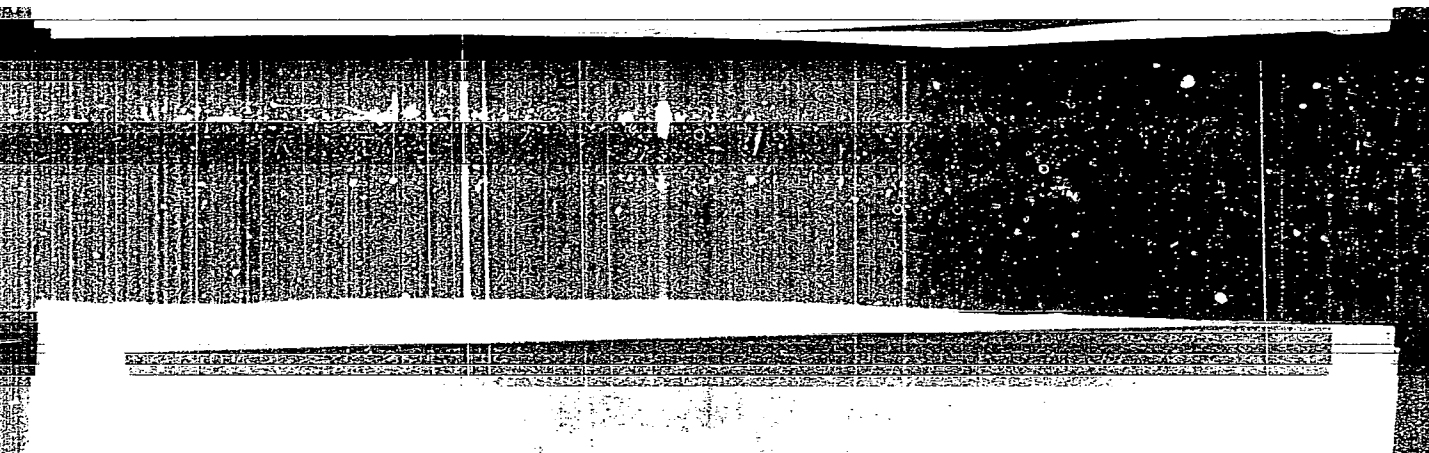
The transformations leading towards equivalent schemes are here called "equivalent" and denoted by the sign of equality (=). If also the conductivity is maintained (except for one magnitude), this is called an absolute equivalence and denoted by the sign \equiv . Then a few fundamental laws valid for relay schemes are given. An equivalent transformation is e.g. the inversion of a relay scheme. It is not possible to invert the scheme as a whole but only in parts. If in a relay scheme a relay two-pole Z (in which the windings of all relays of the scheme are contained) can be separated, either the scheme of this two-pole can be inverted by itself or the whole scheme with exception of Z (which then remains unchanged) can be inverted. Also schemes of the class H can be inverted. By the way, also elements with finite conductivity can be introduced into relay chains. In the schemes with valve-elements these valve-elements can be regarded as elements with finite conductivity. Finally the synthesis of the scheme of a double scaler is discussed as an example. (With 1 schedule).

ASSOCIATION Laboratory of the Academy of Sciences of U.S.S.R. for the Revision of Scientific Problems of the Wire-Telecommunication.

PRESENTED BY KULEBAKIN, V.S.,
SUBMITTED 22.6.1956
AVAILABLE Library of Congress
Card 2/2

"APPROVED FOR RELEASE: Tuesday, August 01, 2000

CIA-RDP86-00513R001445

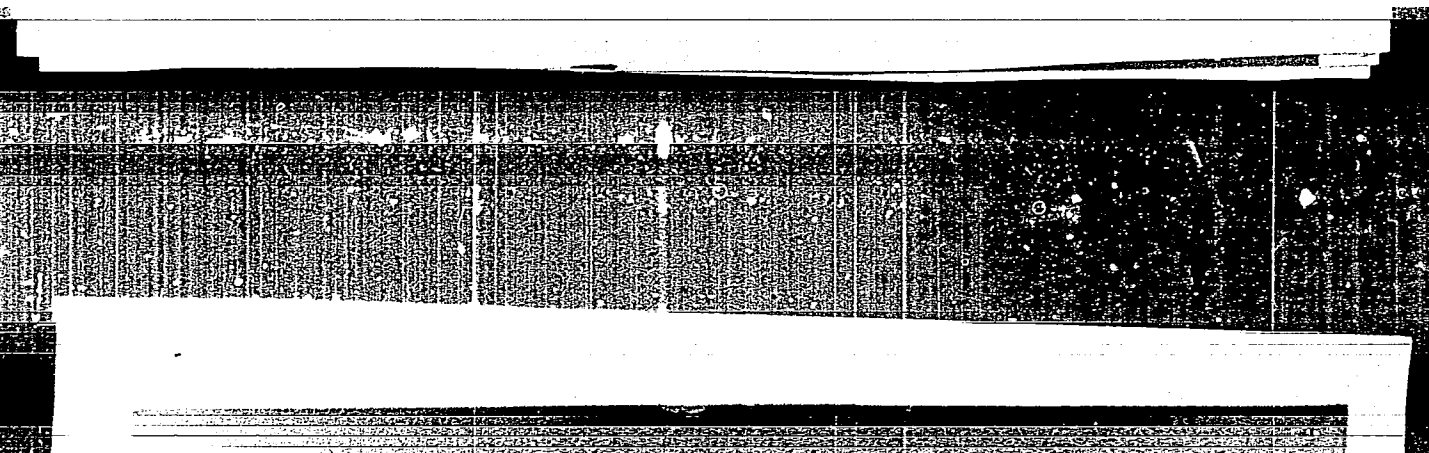


APPROVED FOR RELEASE: Tuesday, August 01, 2000

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APPROVED FOR RELEASE: Tuesday, August 01, 2000

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of structures of relay equipment. The main task was
further development, particularly as regards machine
for the synthesis of structures. The members of the
conference pointed out the advisability of organising
a coordinating commission relating to work on the theory
of relay systems and of establishing an international
Federation relating to this problem.

SOV/30-58-10-13/53

AUTHOR: Roginskiy, V. N., Candidate of Technical Sciences

TITLE: Device for the Construction of Relay ~~Systems~~ (Mashina dlya postroyeniya releynykh skhem)

PERIODICAL: Vestnik Akademii nauk SSSR, 1958, Nr 10, pp 71-73 (USSR)

ABSTRACT: Since 1953 a number of different devices for the analysis of the operation of relay ~~systems~~ have been created. In the years 1955 and 1956 in the Institut matematicheskikh mashin Chekhoslovatskoy Akademii nauk (Institute for Mathematical Devices of the ~~Czechoslovakian~~ AS) a semiautomatic device was constructed which facilitates the projecting process of the contact ~~system~~. At the beginning of 1956, using the works of M. A. Gavrilov and G. N. Povarov the author developed a new graphic method of construction of multipolar contact ~~systems~~ in the Laboratoriya po razrabotke nauchnykh problem provodnoy svyazi Akademii nauk SSSR (Laboratory for the Elaboration of Scientific Problems of ~~Wire Communication~~ of the AS USSR) (Fig 1). In this laboratory in 1956 for the first time in the world, a device was developed in which the synthesis of the relay ~~system~~ by means of a commutator of V. G. Lazarev and Yu. L. Sagalovich

Card 1/2

Device for the Construction of Relay Systems

SOV/30-58-10-13/53

is completely automatic. At present, a new model of a device is being worked out in which the selection of the optimum variant is automatized. The block pattern of such a device can be seen in figure 2. There are 2 figures.

Card 2/2

ROGINSKIY, V.N.

SOV/102-58-3-7/10

AUTHORS: Povarov, H.M. (Povarov, G.M.) and Rogins'kyy, V.M.
(Roginskiy, V.N.)

TITLE: A Graphical Method of Synthesizing Multiterminal Networks
(Grafichnyy metod syntezy kontaktnykh bahatopolyusnykh).

PERIODICAL: Avtomatika (Kyiv), 1958, Nr.3, pp.84-91 (USSR)

ABSTRACT: A network with 1 input and k outputs is considered; the author's previous work on network synthesis, which used algebraic methods, is here extended to the use of graphical methods. The method is illustrated by Fig.1, where the k outputs are set out as points arranged along a vertical line. The system does not have to be split up into two-terminal ones for this purpose; the method can be applied to symmetrical and to quasi-symmetrical contact systems. The 'cascades' method (expounded in more detail in Avtomatika i Telemekhanika (Refs.6,8) by the same authors), in which systems incorporating resistors and relay coils in the circuits can be considered, at least in a general way, is re-expounded. The method to be adopted when there are p inputs is considered in relation to Fig.3; a hypothetical set of m relays operating from

Card 1/2

SOV/102-58-3-7/10

A Graphical Method of Synthesizing Multiterminal Networks.

one input, where $2^m \geq p$, are considered in one block, and the rest in a second. The second unit thus has p inputs; the two together are treated in the same way. The methods are illustrated for a system with 3 inputs and 3 outputs (Fig.4). The method is always simple to operate, though it does not always give the best result. The usual methods of eliminating surplus contacts are not all applicable, but the advantage lies in the fact that all operations can be mechanized, i.e. can be done by a suitable computer. There are 4 figures and 12 references, of which 10 are

Card 2/2 Soviet, 1 English and 1 Czech.

ASSOCIATION: Laboratoriya po rozrobttsi naukovykh problem providnoho sv'yazku AN SRSR (Laboratory for Solving Scientific Problems of Communication by Wire, Academy of Sciences, Ukr.SSR).

SUBMITTED: July 13, 1957

ROGINSKIY, V.N., Doc Tech Sci--(diss) ^{he} "Elements of structural synthesis
of ~~the~~ relay ~~systems~~ ^{control} in telephony." Mos, Communications Publishing
House, 1958. 22 pp (Min of Communications USSR. Mos Electrical Engine-
ering Inst of Communications), 150 copies. Bibliography: pp 21-22 (25 titles)
(KL, 49-58, 123)

- 45 -

POVAROV, G.N. [Povarov, H.M.]; ROGINSKIY, V.N. [Rogins'kyi, V.M.]

Graphic method for the synthesis of multiterminal contact networks
[with summary in English]. Avtomatyka no.3:84-91 '58. (MIRA 11:12)

1.Laboratoriya po razrabotke nauchnykh problem provodnoy svyazi
AN SSSR.

(Electric networks--Graphic methods)

KHARKEVICH, A.D.; ROGINSKIY, V.N.; OPOL'SKAYA, Ye.K.; LAZAREV, V.G.;
SHAPIRO, S.B.; GORYACHEV, V.A.; PARAFONOV, L.S., otv.red.;
BALAKIREV, A.F., red.; KARABILOVA, S.F., tekhn.red.

[Crossbar telephone substation; information collection]
Koordinatnaya telefonnaya podstantsiya; informatsionnyi
sbornik. Moskva, Gos.izd-vo lit-ry po voprosam svyazi i
radio, 1959. 87 p. (MIRA 13:1)
(Telephone, Automatic)

Roginskiy, V.N.

6(7) p. 2-3

PHASE I BOOK EXPLOITATION

SOV/3016

Akademiya nauk SSSR. Laboratoriya sistem peredachi informatsii

- Problemy peredachi informatsii. vyp. 1: Postroyeniye skhem i setey svyazi. (Problems of Information Transmission. Nr. 1: Design of Communications Circuits and Networks) Moscow, Izd-vo AN SSSR, 1959. 163 p. Errata slip inserted. 2,000 copies printed.

Ed. of Publishing House: G. Ye. Pevzner; Tech. Ed.: A. P. Guseva;
Editorial Board: A. A. Kharkevich (Resp. Ed.), V. N. Kuznetsov,
I. A. Ovseyevich, V. N. Roginskiy (Resp. Ed. of this Issue), V. G.
Solomonov (Deputy Resp. Ed.)

PURPOSE: This collection of articles is intended for specialists
in communications theory.

COVERAGE: This collection of articles by scientists at the Laboratory of Systems for the Transmission of Information, Academy of Sciences, USSR, is a continuation of a series of collections published earlier under the title "Sbornik nauchnykh rabot po provodnoy svyazi" ("Collection of Scientific Works on Wire
Card 1/8

Problems of Information (Cont.)

SOV/3016

Communications") References are given after each article. A bibliography on automatic telephone systems (ATS) with crossbar switches is given in the appendix. This bibliography is considered to be of special interest in connection with the introduction in the USSR of the crossbar system.

TABLE OF CONTENTS:

Foreword

3

Roginskiy, V. N. Graphical Method of Designing Multipolar Contact Circuits

5

This paper was presented at a session of the Scientific and Technical Society of Radio Engineering and Electromunications imeni A. S. Popov on May 10, 1956. The author discusses a new method of synthesizing relay circuits providing series-parallel and bridge-contact circuits, and a method for selecting circuits with a minimum number of contacts and with automatic accounting for neutral and

Card 2/8

Problems of Information (Cont.)

30V/3016

unutilized states. According to the author, this method in certain cases results in a more efficient use of circuits than is possible by analytic methods. It also makes possible mechanization of the synthesis of relay systems. There are 9 references, all Soviet.

Arkhangel'skaya, A. A., V. G. Lazarev, and V. N. Roginskiy.
Apparatus for the Synthesis of Contact Circuits

41

This paper was presented at the Laboratory Seminar on October 5, 1956. The authors present basic principles of designing an apparatus for the synthesis of contact (1,k)-terminal networks. This apparatus was developed at the Laboratory on the basis of the graphical method. There are 9 references: 8 Soviet and 1 English.

Lazarev, V. G. Methods of Determining the Number of Relays Necessary for Designing a Relay-Contact Circuit According to Given Operating Conditions

53

Card 3/8

Problems of Information (Cont.)

SCV/3016

This paper was presented at a session of the Scientific and Technical Society of Radio Engineering and Electro-communications imeni A. S. Popov on May 10, 1956. In this paper, principles are outlined for selecting the minimum number of relays necessary for the synthesis of relay-contact circuits. The minimum number of receiver components and methods of selecting the minimum number of receiving relays are also presented. The author considers the problem of determining the common minimum of receiving and intermediate relays necessary for designing circuits according to given conditions. There are 8 references: 6 Soviet and 2 English.

Kharkevich, A. D. Selecting a Grouping Lay-out for a Telephone System Substation

72

This paper was presented at a joint session of the Laboratory Seminar and Department of Telephony at MEIS on June 24, 1953. The author investigates grouping schemes useful in designing small-capacity telephone

Card 4/8

Problems of Information (Cont.)

SOV/3016

system substations with the routing of intercommunications through a regional crossbar system. An evaluation of variations of grouping schemes according to the overall number of connection points is made and the optimum substation grouping scheme is selected and equipped with switching relay-action devices. There are 13 references: 9 Soviet and 4 English

Melik-Gaykazova, E. I., L. I. Smirnova and A. D. Kharkevich.
Experimental Investigation of the Carrying Capacity of the Grouping
Lay-out of a Telephone System Substation 103

The paper was presented at the Laboratory Seminar on October 26, 1956. The selection of the grouping scheme was specified by the authors on the basis of data obtained from calculations using the method of artificial loading. The substation had a capacity of 100 numbers, with two connection stages for outgoing, and three connection stages for incoming traffic. On the basis of this investigation, the authors determine the most convenient distribution of outgoing trunks among the intermediate switches,

Card 5/8

Problems of Information (Cont.)

SOV/3016

the necessary number of internal trunks between the incoming and intermediate switches, and the holding sequence of the internal trunks. There are 7 references, 3 Soviet and 4 English.

**Analysis of Grouping Lay-out of a Telephone System Substation
Using the Method of Probability Graphs**

118

This paper was presented at the Laboratory Seminar on November 23, 1956. A method using probability graphs for calculating the carrying capacity of complex switching networks is presented. A telephone substation with two connection stages for outgoing and with three connection stages for incoming traffic is investigated using probability graphs. On the basis of this investigation the author determines the most convenient graph topology, using cross-bar trunks in developing substation switching. In an appendix a new treatment of the probability graph is presented. There is 1 English reference.

Card 6/8

Problems of Information (Cont.)

SOV/3016

PoVarov, G. N. Structural Theory of Communications Networks 126

This paper was presented at a joint session of the Laboratory Seminar and of the Telephony at MEIS on January 6, 1956. The fundamentals of mathematical analysis of communications networks using matrix algebra are presented. Problems in the structural theory of communications networks are discussed: calculation of the number of tandem trunks between any two stations in the network, determination of the length of the longest and shortest tandem trunk, of the coherence and compactness of the network and of some other parameters. The relationship between the structural theory of communications networks, graphical theory and theory of relay-contact circuits is discussed. There are 17 references: 11 Soviet (including translation), 4 English and 2 German.

Kharkevich, A. D. Bibliography on the Swedish Crossbar System 141

Card 7/8

Problems of Information (Cont.)

SOV/3016

This bibliography with annotations contains a list of 69 articles, company data and books; 29 information notes and 89 Swedish patents.

Work of Laboratory Seminars on the Development of Scientific Problems of Wire Communication of the Academy of Sciences, USSR, 1956

160

AVAILABLE: Library of Congress

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JP/mmh
2-3-60

ROGINSKIY, V.M.

Graphical method of constructing multiple pole contact circuits.
Probl. pered. inform. no.1:5-40 '59. (MIRA 13:3)
(Switching theory) (Electric relays)

ARKHANGEL'SKAYA, A.A.; LAZAREV, V.G.; ROGINSKIY, V.N.

Machine for the synthesis of contact circuits. Probl. pered. inform.
no.1:41-52 '59. (MIRA 13:3)
(Switching theory) (Electric relays)

ROGINSKY, V. N.

Report to be presented at the 1st Intl Congress of the Intl Federation of Automatic Control, 25 Jun-5 Jul 1960, Moscow, USSR.

- LEBER, A. Ye. - "The application of a self-adjusting system of automatic control."
- MAJOU, V. B., and KURKOVA, A. M., and KURKOVA, A. - "Industrial telemanagement systems and digital technique."
- MEYER, M. V. - "Some peculiarities of the structure of multi-communications regulation systems."
- MEYER, V. V. - "Evaluation indexes and the possibility of increasing the quality of telemanagement systems."
- MEYER, V. V. - "Concerning the problem of establishing routines in automatic regulation systems."
- MEYER, V. V. - "Principles of construction of digital double code automatic control systems."
- MEYER, V. V. - "Concerning the relation of systems of automatic regulation with the parameters of periodic processes."
- MEYER, V. V., and KURKOVA, A. M., and KURKOVA, A. - "System of automatic control of cutting of rolled metal on a continuous bar mill with the use of digital calculating machines."
- MEYER, V. V. - "Some principles of organizing systems of complex automation of large scale chemical production and optimization of these systems."
- MEYER, V. V. - "Systems of automatic regulation with intermittent change of parameters."
- MEYER, V. V. - "Statistical synthesis of impulse systems."
- MEYER, V. V. - "The invariant principle and its application in the calculation of linear and nonlinear systems."
- MEYER, V. V. - "The problem of autonomy in the technique of automatic control."
- MEYER, V. V. - "Some problems of synthesis of automatic control non-linear systems."
- MEYER, V. V. - "Method of determining the optimum system with non-linear relation of the observed function with the parameters of the signal."
- MEYER, V. V., and KURKOVA, A. M., and KURKOVA, A. - "Principles of construction of a single class of extra control systems for automatic production processes."
- MEYER, V. V. - "The development of the theory of relay devices in the USSR."
- MEYER, V. V. - "Dynamic characteristics of cores with right angle hysteresis winding and their influence on magnetic boosters of automatic control systems."
- MEYER, V. V. - "Various methods of investigating the quality of automatic control systems."
- MEYER, V. V. - "Dynamics of automatic regulation of boiler-turbine units."
- MEYER, V. V., and KURKOVA, A. M., and KURKOVA, A. - "Automatic control of composition of multi-ingredient mixtures."
- MEYER, V. V., and KURKOVA, A. M., and KURKOVA, A. - "Some results of work for the utilization of radioactive relation for automatic control of mining machines."
- MEYER, V. V., and KURKOVA, A. M., and KURKOVA, A. - "Analysis and synthesis of automatic control systems with the aid of calculating machine facilities."
- MEYER, V. V., and KURKOVA, A. M., and KURKOVA, A. - "Automatic synthesis of optimizers and their use for solution of variation problems in automatic synthesis."
- MEYER, V. V. - "A system of alternating current electric drives with autonomous power supply."
- MEYER, V. V., and KURKOVA, A. M., and KURKOVA, A. - "Apparatus for technical control of production with the use of nuclear radiation."
- MEYER, V. V., and KURKOVA, A. M., and KURKOVA, A. - "Methods of organizing the trajectory of roots of linear systems and qualitative determination of type of trajectory."
- MEYER, V. V., and KURKOVA, A. M., and KURKOVA, A. - "Parts of the theory of digital automatic systems."
- MEYER, V. V., and KURKOVA, A. M., and KURKOVA, A. - "Weak stability of telemanagement."
- MEYER, V. V. - "Interactions of a mathematical modeling and calculating technology experiment in calculating leads in electrical systems."

MARKHAY, Ye.V.; ROGINSKIY, V.N.; KHARKEVICH, A.D.. Prinimal uchastiye
ZBAR, N.R., inch.. METEL'SKIY, G.B., otv.red.; RYAZANTSEVA,
M.M., red.; SHEFER, G.I., tekhn.red.

[Automatic telephony] Avtomaticheskaya telefoniya. Moskva,
Gos.izd-vo lit-ry po voprosam svyazi i radio, 1960. 535 p.
(MIRA 13:7)

(Telephone, Automatic)

ROGINSKIY, V. N.

Avtomaticheskaya Telefoniya (By) Ye. V. Markhay, V.N. Roginskiy (1) A.D. Kharkevidh.
Moskva, Svyaz'izdat, 1960.
535 p. diagrs., graphs, tables.
Bibliography: p. 529-531.

ЭЛЕМЕНТЫ. V

V

Elements of the structural synthesis of control relay circuits. New York, Wiley, 1960.

345 p. illus., diagrs., graphs, tables. (JPRS: 5518)

Translated from the original russian: Elementy strukturnogo sinteza releynykh skhem upravleniya, Moscow, 1959.

At head of title: Akademiya Nauk SSSR. Laboratoriya Sistem Peredachi Informatsii.

30111
S/194/61/000/007/021/079
D201/D305

16.9000 (1031, 1250, 1329)

AUTHORS:

Arkhangel'skaya, A.A., Lazarev, V.G., Roginskiy, V.N.
and Sergeyeva, O.F.

TITLE:

A computer for synthesizing relay-switching systems

PERIODICAL:

Referativnyy zhurnal. Avtomatika i radioelektronika,
no. 7, 1961, 51-52, abstract 7 V383 (V sb. Probl.
peredachi inform., no. 6, M., AN SSSR, 1960, 5-23)

TEXT: Principles are described of the design of a computer for synthesizing relay systems as designed at the Laboratory of Information Transmission Systems of the AS USSR. The conditions which the synthesizing computer should satisfy are set at a switch panel in the form of inputs and outputs. The circuit diagram of the panel is set to test whether the given conditions can be realized and when it shows that these conditions cannot be realized, it determines the minimum number of relays which have to be used for these conditions to be realized. After this, various variants of the circuits are

Card 1/2

A computer for synthesizing...

30111
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D201/D305

designed and the computer chooses the one which has the minimum number of switches or in which the given distribution of relay switches has been obtained. The device design is based on the graphical method of synthesizing switching multiple-pole networks. The final circuit is shown on a lamp register. 10 references. d
[Abstracter's note: Complete translation]

Card 2/2

32847
S/044/61/000/012/002/054
C111/C333

16,8000 (1121,1329,2403)

AUTHOR: Roginskiy, V. N.

TITLE: A graphical band method for the construction of contact networks

PERIODICAL: Referativnyy zhurnal, Matematika, no. 12, 1961, 58, abstract 12A369. (Probl. peredachi inform." Vyp. 6. M., AN SSSR, 1960, 34-45)

TEXT: The author describes an algorithm for the construction of contact $(1,k)$ -networks with use of rotating ways; the algorithm is a development of the graphical method (RZhMat, 1960, 3869). For writing the conditions the author uses a transparent band with three lines and 2^n columns, where n is the number of the receiving relays. The forbidden numbers of the relay states are written in the lower line, the obligatory numbers are written in the mean line, and the rotating numbers in the upper line. For this kind of writing all operations of the graphical method consist of laying the bands upon another, of the comparison of the numbers standing on them and of the corresponding cutting open of the bands. Finally, it is shown that the operations of the proposed method are modelled by circuits with impulse series and that the method

Card 1/2

32847

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C111/C333

A graphical band method for the . . .

can serve as the base of an instrument with contactless elements for
the synthesis of relay circuits.

There are 6 references.

[Abstracter's note: Complete translation.]

Card 2/2

28212
S/194/61/000/005/043/078
D201/D303

16.8000 (2802, 1132, 1329)

AUTHOR:

Roginskiy, V.N.

TITLE:

Multivalence of solutions in the structural synthesis of on-off systems

PERIODICAL:

Referativnyy zhurnal. Avtomatika i radioelektronika, no. 5, 1961, 39, abstract 3 V322 (Probl. peredachi inform. no. 6, M., AN SSSR, 1960, 71-77)

TEXT: The reasons for multivalence are considered in obtaining on-off circuits from given conditions: Uncertainty of the conditions themselves; the possible choice of any number of intermediate relays which exceed a defined minimum; different structure realizing the same structural conduction; different ways in which the circuits are connected and application of parametric interaction. To choose a circuit, it is necessary to have the opportunity to compare its variants. Methods are given of conventional notation of multivalent conditions. For writing general solutions in a case when con-

Card 1/3

S/194/61/000/005/043/078
D201/D303

Multivalence of solutions...

ventional (indifferent or non-used) states are given, use is recommended of the symbol of identity x/y which denotes the multitude of functions satisfying the inequality $xy \leq \frac{x}{y} \leq x + y$. For the condition "the circuit must 'on' for one and only one (any) state from a given group of m states numbered $\eta_1, \eta_2, \dots, \eta_m$ ", a function

$$N(k_{\eta_1}, \dots, k_{\eta_m}) = \alpha_1 k_{\eta_1} + \dots + \alpha_m k_{\eta_m},$$

is introduced where k_{η_i} - a constituent corresponding to the state with number η_i and only one of the coefficients η_i is equal to 1 and the rest to 0. The number of different solutions in this case is m and for s conditional states $m \cdot 2^s$. For conditions "circuit must be 'on' in any one of the m states and in all other states the state of the circuit may be any", the function

$$R(k_{\eta_1}, \dots, k_{\eta_m}) = N(k_{\eta_1}, \dots, k_{\eta_m}) + \frac{k_{\eta_1} + \dots + k_{\eta_m}}{0}$$

Card 2/3

Multivalence of solutions...

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D201/D303

is introduced. Here the number of different solutions will be $2^m - 1$. Basic formulae are given for transforming the formulae introduced. It is shown that the choice of one or the other solution should be made when joining the given circuit with other circuits so as to join together as many elements as possible. 8 references. [Abstracter's note: Complete translation]

Card 3/3

LX

ROGINSKIY, V.N.

Letter to the editor. Vest. Mosk. un. Ser. 3: Fiz., astron. 15
no. 6:93-98 N-D '60. (MIRA 14:5)
(Electric relays)

ROGINSKIY, V.N.

In regard to V.I. Shestakov's review of V.N. Roginskii's book "Elements of the structural synthesis of switching control circuits." Avtom. i telem. 21 no.7:1094-1098 J1'60.

(MIRA 13:10)

(Automatic control) (Switching theory)
(Shestakov, V.I.)

ROGINSKIY, V. N.

PHASE I BOOK EXPLOITATION

SOV/5741

Akademiya nauk SSSR. Laboratoriya sistem peredachi informatsii.

Problemy peredachi informatsii. vyp. 8: Postroyeniye skhem releynogo deystviya (Problems of Information Transfer. v. 8: Designing of Relay Circuits) Moscow, Izd-vo AN SSSR, 1961. 131 p. Errata printed on the inside of back cover. 2,600 copies printed.

Resp. Ed.: V. N. Roginskiy; Deputy Resp. Ed.: V. G. Solomonov; Tech. Ed.: L. V. Yepifanova.

PURPOSE: This collection of articles is intended for scientific and technical personnel concerned with the transfer of information.

COVERAGE: The book contains eight reports on the designing of relay systems. The reports were submitted by scientific workers of the Laboratoriya sistem peredachi informatsii Akademii nauk SSSR (Laboratory of Information Transfer Systems, AS USSR) to the seminar of the laboratory.

Card 1/7

Problems of Information Transfer (Cont.)

SOV/5741

TABLE OF CONTENTS:

Foreword

3

Lazarev, V. G., O. A. Oganov, and V. N. Roginskiy. Fundamentals in Designing a Contactless Computer for the Synthesis of Relay Switching Circuits

5

The basic principles in designing individual contactless units of a special-purpose high-speed computer used for the synthesis of relay switching circuits are presented. Submitted 12/26/1959.

Arkhangel'skaya, A. A., V. G. Lazarev, and Ch'en Chun-liang. Concerning the Complexity of Realizing Boolean Functions by Switching Circuits

20

In the graphic designing of (1,k)-terminal switching circuits the number of contacts in individual relay is evaluated. The complexity problem in the realization of Boolean functions by switching circuits is reviewed. The upper bound of the number of contacts for relays of a universal (1,k)-terminal network realizing all the set-ups of k Boolean functions of

Card 2/7

Problems of Information Transfer (Cont.)

SOV/5741

of n variables is discussed; the upper and lower bounds of the number of contacts for the relays of a pseudo-universal $(1,k)$ -terminal network which does not realize all the set-ups of k Boolean functions of n variables are obtained. Methods for determining the "capacity" of a computer for the synthesis of switching circuits are proposed on the basis of upper and lower bounds of the number of contacts in the relays of an $(1,k)$ -terminal network. Submitted 5/17/1960.

Ch'en Chün-liang. Concerning the Evaluation of Switching-Circuit Complexity

45

Propositions presented in the preceding article are developed. The problem of evaluating the complexity of switching $(1,k)$ -terminal networks when the graphic method is used in designing circuits, is examined. Formulas for calculating fractions of the set-ups (i.e., the ratio of the number of occurrences of specific functions to the total number of the occurrences of functions) of k Boolean functions of

Card 3/7

Problems of Information Transfer (Cont.)

SOV/5741

n variables are derived for the case when they are realized by a given number of branches and contacts in a single cross section, as well as by a definite number of contacts in the circuit as a whole. In the second instance the fact that the occurrence of Boolean functions on the cross section is not of equal probability is taken into account.
Submitted 4/16/1960.

Roginskiy, V. N. Graphic Designing of Switching Circuits
With Bypass Paths

67

General methods are presented for the transformation of set-up numbers for a graphic synthesis of multi-terminal switching networks, taking into account bypass paths which are formed in connection with the construction of direct deductions. A method is given for clarifying different variants arising from the nonsinglevaluedness of the set-ups during the construction of direct deductions. Submitted 2/17/1960.

Card 4/7

Problems of Information Transfer (Cont.)

SOV/5741

Ch'en Chün-liang. Concerning the Distribution of Probabilities of Occurrence of Boolean Functions

74

The article discusses the problem of variation in probability distribution of the occurrence of Boolean functions passing from one cross section to another in the presence of direct deductions when the switching circuits are designed by the graphic or symbolic method. Formulas are derived for calculating the probability of occurrence of Boolean functions in various cross sections, provided the probability distribution of their appearance on zero cross section is known. Submitted 3/12/1960.

Sagalovich, Yu. I. The Measure of Ordering of a Boolean Function

88

On the basis of the results of writing switching circuits in the form of Boolean functions, the value k is introduced as a minimum number of set-ups of variable values sufficient for identifying a Boolean function.

Card 5/7

Problems of Information Transfer (Cont.)

SOV/5741

Methods of calculating this value which utilize the properties of various classes of Boolean functions, as well as methods of evaluating it, are given. The method of designing the inertia group of a Boolean function is completed, and a scheme is designed which permits a) carrying out group transformations of Boolean functions; b) constructing equivalent (in the sense of noiseproofness) uniform codes. Submitted 6/26/1959.

Lazarev, V. G., and O. A. Ogarov. Graphs-Analytical Method of the Synthesis of Contactless Relay Circuits

109

The method of plotting a block-diagram with parametric relationships of a logical $(1,k)$ -terminal network which realizes Boolean functions using logical gates AND, OR, and NOT, is studied. Submitted 2/17/1960.

Maystrova, T. I., and V. N. Roginskiy. Relay Circuits With Parametric Relationships and Many-Valued Logic

121

Operating conditions of a relay in a circuit with parametric relationships are examined. It is

Card 6/7

Problems of Information Transfer (Cont.)

SOV/5741

demonstrated that the proposed apparatus of many-valued logic may serve for describing the operation and equivalent transformations of such circuits. Submitted 2/5/1960

AVAILABLE: Library of Congress

Card 7/7

JP/dfk/mas
11-8-61

ROGINSKIY, V., kand.tekhn.nauk

Radio telemetry. Radio no.2:28-29 t '61.
(Telemetering)

(MIRA 14:9)

38741

S/194/62/000/005/038/157
D222/D309

9.7100

AUTHORS: Lazarev, V.G., Oganov, O.A., and Roginskiy, V.N.

TITLE: Principles of a contactless computer for relay-contact network synthesis

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 5, 1962, abstract 5-2-125 t (V sb. Probl. peredachi informatsii, no. 8, M., AN SSSR, 1961, 5-19)

TEXT: The design principles of an electronic special-purpose computer for the synthesis of relay-contact networks are examined. The computer consists of (see figure) a keyboard which is a unit for the specification of conditions BSC, constituent generator GC, base commutator BC which enables different variants of a circuit to be obtained, blocks for checking the realizability of the given conditions CRC and for the introduction of intermediate relays IIR, a storage unit with shifting registers SR and matrices of the compulsory MCN and forbidden MPN numbers, computing, CU, and program, PRU, units, and a block for the output of results ORB, a unit for the selection of the optimal variants OVU, and output (printing) unit PU.

Card 1/1 2

Principles of a contactless ...

S/194/62/000/C05/038/157
D222/D309

With the keys of BSC the sequence of input and output signals are indicated, after which the computer determines the realizability of the conditions and, if necessary, introduces an intermediate relay in order to make the conditions realizable. The circuit is constructed on the basis of a graphical method. In CU the conditions are specified in the form of pulse sequences (corresponding to each compulsory or forbidden constituent), generated by GC. The computer constructs $n!$ different variants of a circuit, corresponding to the different bases, and OVU selects the optimal variant (e.g. with respect to a minimal number of contacts) which is then transferred to PU. The computer is built with transistor triggers, and rectangular-hysteresis-loop ferrite AND and OR blocks and memory cells. 8 references. [Abstractor's note: Complete translation].

Card 2/1 2

16,8000

S/044/62/000/003/076/092
C111/C333

AUTHORS: Lazarev, V. G., Oganov, O. A., Roginskiy, V. N.
TITLE: The foundations of the construction of a contactless machine for the synthesis of relay-contact circuits
PERIODICAL: Referativnyy zhurnal, Matematika, no. 3, 1962, 53-54, abstract 3V280. ("Probl. peredachi informatsii". No. 8. M., AN SSSR, 1961, 5-19)
TEXT: The construction of a specialized logical machine for the synthesis of contact (1,k)-networks composed of contacts of 10 and more independent relays, according to the algorithm of the graphic synthesis method is possible only under application of contactless elements (because of the required speed and extents). As basic elements there are recommended ferrites with rectangular hysteresis cycle; semiconductor diodes and triodes. The working conditions of the synthesized circuit are introduced into the machine as a series of positive and negative impulses. The working principle and the block diagrams of the nodes simulating the following operations are described: construction of the realized cut-in table, writing of the working conditions, separation,

Card 1/2

The foundations of the construction ...

S/044/62/000/003/076/092
C111/C333

comparison and transformation of the blocks, storage and delivery of the results. The complexity of the proposed machine is approximately proportional to the number of the relays of the synthesized circuit.

[Abstracter's note: Complete translation.]

JB

Card 2/2

S/194/62/000/005/032/157
D222/D309

9.2140

AUTHOR: Roginskiy, V.N.

TITLE: Graphical construction of switching circuits with indirect pathways

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 5, 1962, abstract 5-2-122 v (V sb. Probl. peredachi informatsii, no. 8, M., AN SSSR, 1961, 67-73)

TEXT: General methods of checking the number of combinations during the graphical synthesis of multi-terminal switching circuits are given, taking into account the indirect pathways formed through the direct outputs. A method is given for the development of different variants, obtained because of the possible ambiguities of the solutions when assembling sets of direct outputs. [Abstractor's note: Complete translation].

VB

Card 1/1

32850

S/044/61/000/012/005/054
0111/C333

16.8000 16.7000 (1121,1329)

AUTHORS: Maystrova, T. L., Roginskiy, V. N.
TITLE: Relay circuits with parameter dependences and multivalued logic
PERIODICAL: Referativnyy zhurnal, Matematika, no. 12, 1961, 59, abstract 12A372. ("Probl. peredachi informatsii", Vyp. 8.M., AN SSSR, 1961, 121-131)

TEXT: For the analysis and synthesis of relay contact (r.-c.) Π -circuits with parameter dependence or, in other words, of the "mixed" r.-c. Π -circuits (R Zh Mat, 1958, 4556; 1960, 10120K; Sb. nauchnykh rabot po provodnoy svyazi [Symposium of scientific papers on wire communication], AN SSSR, 1957, 6), the same multivalued logic is proposed as in the paper of T. L. Maystrova (R Zh Mat, 1961, 8A292). The problem of the choice of the working conditions of the relays in the circuit is discussed more detailed than in the papers mentioned above. The notion of the "capacity" of the relay used in these papers is not used in the reviewed paper. Here it is replaced by the notion "class $\chi(A)$ to which the relay A belongs". "If the class to which the relay A is belonging is denoted by $\chi(A)$, the parallel connection by + and its series

Card 1/3

32850

S/044/61/000/012/005/054

C111/C333

Relay circuits with parameter . . .

connection by \cdot , then the class of a chain consisting of two relays is defined as follows:

$$\begin{aligned}\chi(A + B) &= \max [\chi(A), \chi(B)], \\ \chi(A \cdot B) &= \min [\chi(A), \chi(B)].\end{aligned}$$

The system of the "classes" $\alpha_1 < \dots < \alpha_i < \dots < \alpha_{m-1}$ ($i = 1, \dots, m-1$)

is completed by the classes 0 and 1. "Let the open chain belong to the class 0, the closed chain to the class 1". The relation $0 < \chi(A) < 1$ holds for every relay A. "The number of the class α_i is called inverse to the number α_j if $\alpha_j = 1 - \alpha_i$. A circuit, in which all parallel

connections of the elements are replaced by series connections and the series connections by parallel connections (with change of the numbers of the classes of elements to the inverse numbers), is called inverse circuit to the given circuit." The numbers of classes α_i serve as values of the variables of the $(m+1)$ -valued logic used in the paper. The following operations serve as fundamental operations of this logic:

Card 2/3

32850

Relay circuits with parameter . . .

S/044/61/000/012/005/054
C111/C333

$$\alpha_i + \alpha_j = \max(\alpha_i, \alpha_j), \quad \alpha_i \cdot \alpha_j = \min(\alpha_i, \alpha_j), \quad \bar{\alpha}_i = 1 - \alpha_i.$$

[Abstracter's note: Complete translation.]

4

Card 3/3

DEVYATKOV, N.D.; GRODNEV, I.I.; ROGINSKIY, V.N.; GAL'PERIN, Ye.I.

An All-Union session. Radiotekhnika 16 no.10:77-80 0 '61.
(MIRA 14:10)

1. Rukovoditel' seksii elektroniki Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi imeni Popova (for Devyatkov). 2. Rukovoditeli seksii provodnoy svyazi Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi (for Grodnev, Roginskiy). 3. Rukovoditel' seksii poluprovodnikovyykh priborov Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi (for Gal'perin).

(Electronics)

ROGINSKIY, V.N. (Moskva)

Generalized graphical method for designing switching circuits.
Avtom. i telem. 22 no.3:350-358 Mr '61. (MIRA 14:9)
(Switching theory)

29252
S/103/61/022/010/011/018
D274/D301

9.7100

AUTHOR:

Roginskiy, V. N.

TITLE:

Synthesis of switching circuits with "real" contacts

PERIODICAL:

Avtomatika i telemekhanika, v. 22, no. 10, 1961, 1355-1359

TEXT: The operation of switching circuits in transient periods is considered. It is shown that the mathematical apparatus of three-valued (modal) logic (Lukasiewicz's) can be used for synthesizing switching networks without breakdowns in transient periods. Two types of switching contacts are considered: break-before-make and make-before-break contacts. In addition, contacts which close and open the circuit only in transient periods are considered. The steady states of the relays correspond to 0 and 1, and the transient state--to $1/2$. The synthesis is based on Lukasiewicz's three-valued logic, where addition (+), multiplication (·) and inversion (N) are defined by a table. The relationships of the corresponding distributive algebra are given. Thereupon, the functions which denote the various contacts satisfy the following relationships

Card 1/4

29252

S/103/61/022/010/011/018

D274/D301

Synthesis of...

x	a	\bar{a}	a'	\bar{a}'	a''	\bar{a}''	\hat{a}	\check{a}
Nx	\bar{a}	a	\bar{a}''	a''	\bar{a}'	a'	\check{a}	\hat{a}

(10)

$$\hat{a} = a'' \cdot \bar{a}'', \check{a} = a' + \bar{a}', \quad (11)$$

$$a + \bar{a} + \hat{a} = 1, a \cdot \bar{a} \cdot \hat{a} = 0, \quad (12)$$

$$a'' = a + \hat{a}, \bar{a}'' = \bar{a} + \hat{a}, \quad (13)$$

$$a' = a \cdot \check{a}, \bar{a}' = \bar{a} \cdot \check{a}, \quad (14)$$

(In the above order, the various contacts are denoted by $a' - \bar{a}'$, $a'' - \bar{a}''$, \hat{a} , \check{a} .) The synthesis proceeds from a switching table. First, a table is considered where the state of only one relay changes during the transition. Thus, e.g., if a network of 3 relays A, B, C passes from the state 001 to the state 101, such a transition is made to correspond to the circuit $\hat{a}\bar{b}c$ which will be closed only during the given transitions. The formulas which describe the process ought to contain, in addition to the steady-state terms, the transient terms too; thereby, the transitions which were not effected in the process can be included as well. As an

Card 2/4

Synthesis of...

29252
S/103/61/022/010/011/018
D274/D301

example, a three-relay circuit f is considered, operating by Gray's code. After transformations, one obtains

$$f = \bar{a}b + ac + \hat{a}(b + c) = (\bar{a} + \hat{a})b + (a + \hat{a})c = \bar{a}'b + a''c \quad (20)$$

Further, the inverse expressions are obtained. The above method can be also used if it is required to design a circuit which is closing only during a certain transition. Further, the case of several relays with different states is considered. If a two-relay network passes from the state 00 to the state 11, the circuit z_{ij} is expressed by

$$\begin{aligned} z_{ij} &= \hat{a}\hat{b} + \bar{a}\hat{b} + \bar{a}\bar{b} + \hat{a}b + \hat{a}\bar{b} + a\bar{b} + a\hat{b} = \\ &= \hat{a}(\hat{b} + b + \bar{b}) + \hat{b}(\hat{a} + \bar{a} + a) + \bar{a}\bar{b} + a\bar{b} = \\ &= \hat{a} + \hat{b} + \bar{a}\bar{b} + a\bar{b} \end{aligned} \quad (23)$$

Card 3/4

29252

S/103/61/022/010/011/018
D274/D301

Synthesis of...

If s relays A_1, A_2, \dots, A_s pass from the state i to the state j ,
then

$$z_{ij} = \sum_{l=1}^s \hat{a}_l + \sum_{l \neq i,j} k_l \quad (24)$$

There are 3 figures, 1 table and 10 references: 9 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: D. A. Huffman, The Design and Use of Hazard-free Switching Networks, J. Assoc. Comput. Machinery, v. 4, no. 1, 1957.

SUBMITTED: February 24, 1961

Card 4/4

ROGINSKIY, V. N.

"Behaviour of discrete automata (switching systems) during transition periods"

report submitted for the Intl. Symposium on Relay Systems and Finite Automata Theory
(IFAC), Moscow, 24 Sep-2 Oct 1962

S/030/62/000/001/004/011
B104/B102

6,4600

AUTHOR: Roginskiy, V. N., Doctor of Technical Sciences

TITLE: Scientific problems of design of a single system for transmission of information

PERIODICAL: Akademiya nauk SSSR. Vestnik, no. 1, 1962, 35 - 43

TEXT: An information transmission system is regarded as an assembly of "subscribers" (sources and receivers of information), communication channels (wire channels, radio channels, waveguides, etc.), communication stations (stations for the distribution of information, commutation stations, etc.), and centers of information processing. The location of the "subscribers" and the demands on kind and reliability of information transmission are of essential importance to the design of such a system. The design problems are divided into two main groups: The first group includes problems of the design of channels and final equipment, while the second group comprises problems of information distribution. In order to achieve a certain quality factor of information transmission with a minimum of cost, the flow of information, its properties, and transmission

Card 1/2

✓B

Functional-logical properties of ... S/562/62/000/011/001/008
E140/E135

The following concepts are defined: a) position, i.e. the state of the element; b) stability; c) response time (whether "instantaneous" or delayed); d) structure (number of inputs and outputs); e) logical function; f) directivity. Turning to devices, the author distinguishes three parts: 1) the control; 2) operator; 3) auxiliary circuits. The latter are those elements not directly concerned with the processing or transmission but which are required for correct operation of the device (e.g. matching networks, waveshapers, etc). In the control we find: a) input elements, reacting to the input signals; b) intermediate elements, serving to memorize the input elements and their sequences; c) connection elements, transmitting signals derived from the processing of the input sequence. The operator supplies the output signals as a function of the state of the control and the input signals. The author then proceeds to a discussion of sequential circuits, hazards and equivalence of circuits. There are 5 figures.

SUBMITTED: December 24, 1960

Card 2/2

S/562/62/000/011/001/008
E140/E135

AUTHOR: Roginskiy, V.N.

TITLE: Functional-logical properties of switching elements and devices

SOURCE: Akademiya nauk SSSR. Institut problem peredachi informatsii. Problemy peredachi informatsii. no.11. 1962. Voprosy teorii pererabotki i raspredeleniya informatsii. 5-22.

TEXT: The author attempts to list and classify the properties of switching elements and devices in accordance with the basic functions of these elements and devices in the processing of information. Physical properties are neglected, an abstract treatment being given. A network is conceived as oriented, with distinct inputs and outputs, joined by a switching network. One input is denoted "0" and serves to bring all elements of the switching network to the initial state. There are two groups of output terminals, one of which depends directly on the input signals, and the other depends on the input signals and the state of the switching network. Elements are considered first.
Card 1/2

Scientific problems of design ...

S/030/62/000/001/004/011
B104/B102

requirements have to be studied. The optimum connections between stations with a given flow of information can be found by technical and economic investigations. The interrelations between quantitative, qualitative, and economic characteristics have to be studied with the aid of graphs and matrix calculation. The number of channels required between the various parts of the network can be studied with the aid of the theory of telephone systems. The dependence of the quality characteristics of the network on its configuration and on the behavior of the network during overload and breakdown of some of its parts has to be studied. It is necessary that universal channels for transmission of information of different kinds (e. g., telephone and telegraph informations) should be developed. The reliability of information transmission can be improved by one or more "by-pass" ways besides the main way of transmission between two stations. Several methods of improving the reliability of information transmission and control systems which automatically determine the way of information are discussed. There are 3 figures. ✓B

Card 2/2

16.0200
S/562/62/000/011/003/008
E140/E135

AUTHOR: Roginskiy, V.N.

TITLE: The transient operation of switching circuits

SOURCE: Akademiya nauk SSSR. Institut problem peredachi informatsii. Problemy peredachi informatsii. no.11. 1962. Voprosy teorii pererabotki i raspredeleniya informatsii. 34-46.

TEXT: The author applies the three-valued logic of Lukasewics to the problem of the synthesis of switching circuits free of hazards in the transient periods. An algebra is developed for contact networks in this way which permits the hazards to be expressed in terms of algebraic constraints on the network being synthesized, and permitting the final network to be obtained directly. VB

There are 10 figures.

SUBMITTED: February 4, 1961

Card 1/1

ROGINSKIY, V.N. (Moskva)

Design of the structure of information transmitting networks.
Izv. AN SSSR. otd. tekhn. nauk. tekhn. kib. no.3:204-208 My-Je '63.
(MIRA 16:7)

(Information theory)

ROGINSKIY, V.N.

Design of transistor switching circuits. Probl. pared. inform.
no.12:32-38 '63. (MIRA 17:10)

LANDER, Valeriya L'vovna; ROGINSKIY, Vadim Nikolayevich;
SOLOV'YEV, Shaya Grigor'yevich; IL'INA, L.D., otv. red.
KOMAROVA, Ye.V., red.

[Engineering methods for constructing relay systems] In-
zhenernye metody postroeniia releinykh skhem. Moskva, Izd-
vo "Sviaz'" 1964. 39 p. (MIRA 17:5)

L 16487-65 EPF(n)-2/EWT(d)/EWP(1) Pg-4/Pk-4/Pl-4/Po-4/Pq-4/Pu-4/Pae-2
IJP(c) WM/BC

ACCESSION NR AM4041629

BOOK EXPLOITATION

S/

Roginskiy, Vadim Nikolayevich

Design of relay control systems (Postroyeniye releyny*kh skhem upravleniya),
Moscow, Izd-vo "Energiya", 1964, 422 p. illus., biblio., index. 14,500
copies printed.

TOPIC TAGS: relay control system

PURPOSE AND COVERAGE: The book considers methods of synthesizing and analyzing structures of relay assemblies -- discrete automatic machines built on contacts and contactless relays, semiconductor, magnetic and other types of instruments. The fundamentals of the theory of relay assemblies -- one of the areas of engineering cybernetics and methods of obtaining structures with a minimum number of elements -- are given. The book is intended for engineers and technicians specializing in the design of relay control systems, automation, and remote control systems in various branches of the economy and also for students in electrical engineering schools who are specializing in electrical communications, automation, and remote control.

TABLE OF CONTENTS [abridged]:

Card 1/2

L 16487-65

ACCESSION NR AM4041629

Foreword --	3
Introduction --	11
Ch. I. Relay assemblies and elements --	18
Ch. II. Functional properties of relay elements and assemblies --	45
Ch. III. Structure and operating conditions of relay assemblies --	63
Ch. IV. Algebra of contact schemes --	97
Ch. V. Building and transformation of contact schemes --	133
Ch. VI. Graphic method of building contact schemes --	159
Ch. VII. Building Relay multi-contact assemblies --	199
Ch. VIII. Conversion of relay schemes --	234
Ch. IX. Building single-cycle assemblies on contactless elements --	286
Ch. X. Multi-cycle assemblies of relay action on contactless elements --	328
Ch. XI. Structural analysis of relay assemblies --	354
Ch. XII. Examples of building relay assemblies --	392
Bibliography --	413
Index --	422

SUB CODE: DP

SUBMITTED: 25Jan64

NR REF SOV: 125

OTHER: 048

Card 2/2

L 24923-65 EWA(h)/EWT(1) Feb GG
ACCESSION NR: AT5001698

S/2945/64/000/017/0016/0026

AUTHOR: Arkhangel'skaya, A. A.; Yershov, V. A.; Roginskiy, V. N. (Doctor of technical sciences)

TITLE: Multi-coordinate switching systems 25

SOURCE: AN SSSR. Institut problem peredachi informatsii. Problemy peredachi informatsii, no. 17, 1964. Printsipy postroyeniya satey i sistem upravleniya (Principles of network construction and control systems), 16-26

TOPIC TAGS: switching system, multicoordinate switching system, spatial switching, multiplexing, information transmission, space coordinate, control system

ABSTRACT: The efficiency of multi-coordinate switching systems as compared with purely spatial systems, especially the bulk of spatial switching equipment, is demonstrated. The use of multi-coordinate switching systems may be efficient not only for switching of multiplexed lines utilizing these coordinates (indexes) used for multiplexing, but also in the case of switching channels separately with respect to a single coordinate (e.g., in space); i.e., it is possible to use a larger number of indexes for switching than for channel separation. Only com-

Card 1/2

L 24923-65

ACCESSION NR: AT5001698

paratively practicable switching systems without blocking, which do not yield internal losses, are considered, permitting comparison with spatial switching systems for the same service characteristics. It is confidently believed that the shift to systems which are not completely practicable, in which separation of all entering channels may not occur and cables or parts of cables may be used to connect several channels, may yield an even greater gain. Using the same indexes for switching as for multiplexing makes it possible to construct the switching system with the same parts and to utilize the same principles as in the multiplexing device. Thus it is possible to produce a single "switching-multiplexing" system which will give results in use. Orig. art. has: 6 figures, 20 formulas and 1 table.

ASSOCIATION: Institut problem peredachi informatsii AN SSSR (Information transfer problems institute, AN SSSR)

SUBMITTED: 00

ENCL: 00

SUB CODE: IE

NO REF SOV: 007

OTHER: 001

Card 2/2

L 24926-65 EWT(d) IJP(c)
ACCESSION NR: AT5001703

S/2945/64/000/017/0085/0090

AUTHOR: Roginskiy, V. N. (Doctor of technical sciences)

TITLE: One type of probability discrete automaton 16

SOURCE: AN SSSR, Institut problem peredachi informatsii. Problemy peredachi informatsii, no. 17, 1964. Printsipy postroyeniya setey i sistem upravleniya (Principles of network construction and control system), 85-90

TOPIC TAGS: probability discrete automaton, automaton synthesis, probability function, probability element, relay system, switching device, control system

ABSTRACT: The probability discrete automaton is considered as a (p,k) -terminal network with control inputs and outputs. It is assumed that input and output signals are two-valued (0 and 1). The combination of signals at the input at time t is called the state of the input X_t and the combination of signals at the output, the state of the output Z_t . To simplify discussion it is agreed that the automaton operates in a synchronous regime. The problem of synthesizing such a single-cycle automaton is formulated as follows: When a certain given state X_t appears at the input, then one of the states $Z_t^1, Z_t^2, \dots, Z_t^k$ appears at the output

Card 1/3

L 24926-65

ACCESSION NR: AT5001703

appears at the output with a probability, respectively, of q_1, q_2, \dots, q_l ($\sum_{i=1}^l q_i = 1$). For individual two-valued outputs this corresponds to the requirement that, for an input state X_t , the signal at the j -th output z_{jt} takes the value 1 with a certain probability q_{jt} and the value 0 with a probability $\bar{q}_{jt} = 1 - q_{jt}$. For multicycle devices, probability conditions may be formulated in two ways (only statistical signals are considered although the entire discourse may be applied to pulse signals): 1) In a certain cycle t characterized by the state of input X_t and position (internal state) S_t , the state of the outputs must take one of the values $Z_t^1, Z_t^2, \dots, Z_t^l$ with l given probabilities q_1, q_2, \dots, q_l . 2) After a certain sequence the states of the automaton $(X_0, S_0), (X_1, S_1), \dots, (X_{t-1}, S_{t-1})$ for a state of inputs X_t in cycle t , the automaton passes to one of the positions $S_t^1, S_t^2, \dots, S_t^l$ with a given probability q_1, q_2, \dots, q_l ($\sum_{i=1}^l q_i = 1$). Sections of the article are devoted to: probability function and probability automata; synthesis of probability discrete automata; multicycle probability automata. Orig. art. has: 7 formulas and 4 figures.

ASSOCIATION: Institut problem peredachi informatsii AN SSSR (Information transfer problems institute, AN SSSR)

Card 2/3

L 24926-65

ACCESSION NR: AT5001703

SUBMITTED: 00

ENCL: 00

SUB CODE: YE

NO REF SOV: 004

OTHER: 002

Card 3/3

15570-66 EWT(1)/EWA(h) GG/GS

ACC NR: AT5018232

SOURCE CODE: UR/0000/65/000/000/0136/0149

AUTHOR: Roginskiy, V. N.

ORG: none

TITLE: Transient period behavior of relay networks in digital automata

SOURCE: International symposium on the theory of relay systems and finite automata.
Moscow, 1962. Teoriya konechnykh i veroyatnostnykh avtomatov (Theory of finite and probability type automata); trudy simpoziuma. Moscow, Izd-vo Nauka, 1965, 136-149

TOPIC TAGS: pulse signal, switching circuit, switching theory, digital system

ABSTRACT: A method of synthesizing binary switching networks which can be extended to handle multiple position relay devices is discussed. The output signals can be dc in nature and thereby determine a static state in the device, or they can be impulsive transients occurring only in the transient period mentioned. If the device can exist in m states, then the number of different transitions can be $m(m-1)$. In some cases, e. g. in devices with magnetic elements, transformers, and condensers, pulse signals appearing in the transitional period determine the operation of the

Card 1/2

L 15570-66
ACC NR: AT5018232

device, but in other cases the pulse signals can cause a disturbance in the operation of the device, whose inputs are basically dc signals. The transition of a system from one state to another does not occur instantaneously, and it is the transitional interval that is of great interest here. A mathematical procedure is developed which when applied to relay contact networks allows one to select from various types of switching contacts and to establish in what sequence the relays should change the state of their contacts. Every given relay device of m possible states can be characterized by an "output matrix" $[Z]$ of rank m , whose elements $Z_{ij}(i \neq j)$ correspond to impulsive signals, appearing in the transition of the device from state i to state j , and the elements Z_{ii} are the static signals arising in state i . Only the case of binary signals is considered, taking the value 0 and 1. The author principally examines devices consisting of two-position elements, and it is assumed that on every output of such an element the signal can change its state no more than twice for one transitional period, whereas in the general case these changes can occur at any moment in the transitional period. After examining the conditions for the appearance of impulsive signals, the author discusses synthesis of structures and of elements with either symmetrical or nonsymmetrical elements. Orig. art. has: 10 figures, 42 formulas.

SUB CODE: 09/ SUBM DATE: 00/ ORIG REF: 008/ OTH REF: 005

Card 2/2 MC

ACC NR: AT6029525 SOURCE CODE: UR/0000/65/000/000/0026/0042

AUTHOR: Roginskiy, V. N.

32

ORG: none

TITLE: Transient processes in relay systems (discrete automata) [Paper presented at a Seminar at the Institute on March 23, 1964]

SOURCE: AN SSSR. Institut problem peredachi informatsii. Seti peredachi informatsii i ikh avtomatizatsiya (Circuits for information transfer and their automation), Moscow, Izd-vo Nauka, 1965, 26-42

TOPIC TAGS: automation, logic design, switching theory, discrete automaton

ABSTRACT: The behavior of discrete systems with inherent delay, lag (defined as pure delay of an element which is insensitive to further input signal changes for the duration of delay), and racing conditions is analyzed. The elements realizing the delay function are treated either as logic elements driving a delay element or delay blocks driving one logic element. In the case of lag an additional block is included which acts as a filter for pulses whose duration does not exceed a certain minimum value. The system behavior is also analyzed when the input signals do not coincide but have a certain random time distribution. The output signals in these cases also assume a random character. The methods for the elimination of errors due to signal distortion by these non-ideal elements are examined. Orig. art. has: 25 formulas, 3 tables, and 11 figures.

Card 1/14p SUB CODE: 09/ SUBM DATE: 04Dec65/ ORIG REF: 009/ OTH REF: 002

L 33364-66 EWT(d)/FSS-2

ACC NR: AP6008024

SOURCE CODE: UR/0406/66/002/001/0100/0104

AUTHOR: Roginskiy, V. N.

ORG: None

TITLE: Conversion of signal time parameters in discrete asynchronous automaton⁴

SOURCE: Problemy peredachi informatsii, v. 2, no. 1, 1966, 100-104

TOPIC TAGS: automaton, signal element, computer component

ABSTRACT: The author presents a classification of elements which convert time parameters of ambiguous signals, and determines the functional characteristics of such elements. It is assumed that the signals appearing on the individual inputs and outputs of elements are in the form of sequential pulses (signal value 1) and pauses (value 0) of various periods. Detailed analysis is given of delay elements, filters (lag elements), discriminating circuits, pulse shaping circuits, and stores. Descriptions are given of these elements and their simulation. Orig. art. has: 5 figures and 16 formulas.

SUB CODE: 09 / SUBM DATE: 10May65/ ORIG REF: 008

UDC 62-507

Card 1/1

BLS

L 23983-66 EWT(d) IJP(c)

ACC NR: AP6004986

SOURCE CODE: UR/0406/65/001/001/0052/0056

AUTHOR: Roginskiy, V.N.

ORG: none

TITLE: The reaction of a one-cycle discrete automaton to a change in the input action

SOURCE: Problemy peredachi informatsii, v. 1, no. 1, 1965, 52-56

TOPIC TAGS: automaton, feedback system, logic element, delay element

ABSTRACT: This article investigates the transient processes in one-cycle discrete automata which have no feedback loops, which are constructed on logic elements, having delays (inertia), and it is assumed that the delays have an identical effect on the forward and the trailing segments of the signal and are constant. Such an automaton may be described by a functional circuit constructed of two types of functional blocks: logic and delay blocks connected so that every output of the block is connected to no more than one output of another block. It is found that if the delays are different then additional transformations should be introduced, because the formula derived is not valid when

$$q_i(t) = q_i[a(t), b(t), \dots, n(t)].$$

Card 1/2

UDC: 62-503.5

L 23983-66

ACC NR: AP6004986

inversion takes place. Special transformations are required when the elements have delays, i. e., when the signal at the output appears only in the case when the time interval of the signal with a new value exceeds the delay. The device described may be utilized for automata with feedback systems and stores which may be incorporated into feedback systems. Orig. art. has: 1 figure and 18 formulas.

SUB CODE: 09 / SUBM DATE: 12Oct64 / ORIG REF: 002

Card 2/2 *FV*

ROGINSKIY, V.N., doktor tekhn. nauk, otv. red.; GARMASH, V.A.,
kand. tekhn. nauk, zam. otv. red.

[Control and switching systems] Sistemy upravleniia i
kommutatsii. Moskva, Nauka, 1965. 136 p. (MIRA 18:9)

1. Akademiya nauk SSSR. Institut problem peredachi informa-
tsii.

ROGINSKIY, V.N.

Response of discrete monotact automata to input change. Probl. pered. inform. 1 no.1:52-56 '65.
(MIRA 18:7)

ANKHANGEL'SKAYA, A.A.; YERSHOV, V.A.; ROGINSKIY, V.N.

Principles of the construction of a unified system "multiplexing -
switching." Elektrosвяз' 19 no.5:40-49 My '65.

(MIRA 18:6)

1. NOGINSKIY, V. V.; ZHEREBTSOV, I.
2. USSR (600)
4. Shul'gin, V. M.
7. Bad chapter in a substantial textbook. Radio No. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

ROGINSKIY, Vadim Nikolayevich; YURASOV, A.N., red.; LARIONOV,
G.Ye., tekhn. red.

[Design of relay control systems] Postroenie releinykh
skhem upravleniia. Moskva, Izd-vo "Energiia," 1964. 422 p.
(MIRA 17:3)

ROGINSKIY, Vladimir Yur'yevich; VOYCHINSKIY, M.I., red.; SOBOLEVA,
Ye.M., tekhn. red.

[Electric power supply of radio devices] Elektropitanie ra-
dioustroistv. Moskva, Gosenergoizdat, 1963. 361 p.
(MIRA 16:7)

(Radio—Equipment and supplies)
(Electric power supply to apparatus)

CHECHIK, Petr Oskarovich; ROGINSKIY, V.Yu., red.; MATVEYEV, G.I.,
tekhn.red.

[New sources of power for radio equipment] Novye istochniki
pitaniia radioapparaty. Izd.2., perer. Moskva, Gos.energ.
izd-vo, 1959. 47 p. (Massovaya radiobiblioteka, no.333)
(MIRA 12:9)

(Radio--Equipment and supplies)

SVETLOV, Nikolay Ivanovich; ROGINSKIY, V.Yu., red.; ZHITNIKOVA, O.S.,
tekhn. red.

[High-voltage sources of high frequency and low power] Malo-
moshchnye vysokochastotnye istochniki vysokogo napriazheniia.
Moskva, Gosenergoizdat, 1962. 125 p. (MIRA 15:7)
(Oscillators, Electror-tube)
(Electric power supply to apparatus)

06549
SOV/142-2-2-25/25
Candidate of Technical Sciences,
Docent

AUTHOR: Roginskiy, V.Yu.,

TITLE: The Sixtieth Birthday Anniversary of Professor Z.I. Model'

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, 1959, Vol 2, Nr 2, p 264 (USSR)

ABSTRACT: Zinoviy Iosifovich Model' was born on March 31, 1899, in Vitebsk. In 1926, he graduated from the Electrical Engineering Faculty of the Moskovskoye vyssheye tekhnicheskoye uchilishche (Moscow Higher Technical School) in the field of radio engineering. In fall 1924, he built with two other students a radio station in Moscow. He organized at this station a radio laboratory in which he conducted investigations of modulation systems and of multi-phase rectifiers. These works became later on the experimental part of his diploma work which was performed under the guidance of M.V. Shuleykin after graduation from the MVTU. In 1928, Z.I. Model' began working in the radio industry and in 1930 he

1/3

06549

SOV/142-2-2-25/25

The Sixtieth Birthday Anniversary of Professor Z.I. Model'

was put in charge of the laboratory for developing high-power radio broadcasting and television stations. He participated in the planning and testing of numerous radio stations of the USSR, for example the 500 kw transmitter imeni Komintern. From 1929 to the outbreak of WW II, Z.I. Model' was also in charge of a Chair of LETI imeni V.I. Ul'yanova (Lenina). Since 1932, he was simultaneously docent at the Elektrotekhnicheskii institut svyazi imeni M.A. Bonch-Bruyevicha (Electrical Engineering Institute of Communications imeni M.A. Bonch-Bruyevich) where he later on headed the Chair of Radio Transmitting Equipment. During the past years, Z.I. Model' is in charge of a Chair of the Politekhnikheskiy institut imeni M.I. Kalinina (Polytechnic Institute imeni M.I. Kalinin), where he is in charge of all radio engineering fields. Professor, Doctor of Technical Sciences, Z.I. Model' is a Laureate of the Stalin Prize and received numerous citations and decorations for his scientific work. He

Card 2/3

06549
SOV/142-2-2-25/25
The Sixtieth Birthday Anniversary of Professor Z.I. Model:

published more than 50 scientific papers and several books on radio engineering, for example "Kurs radio-peredatchikov" (Radio Transmitter Course) on which he worked together with I.Kh. Nevyazhskiy. Z.I. Model' participates actively in the work of the editorial board of the periodical "Radiotekhnika". There is 1 photograph.

Card 3/3

ROGINSKIY, Vladimir Yur'yevich; SHIRYAYEV, N.P., inzh.-mayor, red.;
SOLOMONIK, R.L., tekhn.red.

[Electric current converters] Preobrazovateli toka. Moskva,
Voen.izd-vo M-va obor.SSSR, 1960. 118 p.

(Electric current converters)

(MIRA 14:2)

ROGINSKIY, Vladimir Yur'yevich; KUZ'MINOV, A.I., red.; SHIROKOVA, M.M.,
tekh. red.

[Electric current rectifiers] Vypriamiteli. Moskva, Gos. energ.
izd-vo, 1961. 110 p. (Massovaia radiobiblioteka, no.418)

(Electric current rectifiers) (MIRA 14:11)

AUTHOR: Roginskiy, V.Yu., Candidate of Techn-
Docent

TITLE: The Seventieth Birthday of Professor L.B. Slepyan
(K semidesyatiletiyu prof. L.B. Slep'yana)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy - radiotekh-
nika, 1959, Vol 2, Nr 1, p 128 (USSR)

ABSTRACT: Professor Leopold Borisovich Slepyan had his 70th
birthday in February 1959. Slepyan's scientific
career began in 1913 with his graduation from the
Electromechanical Section of the Petersburg Poly-
technical Institute. In 1935, Slepyan became a
Professor at the Chair of Radio Physics at the
Severo-zapadnyy zaochnyy politekhnicheskiy institut
(North-Western Polytechnical Correspondence Institu-
te) and is presently in charge of this Chair. He
worked on problems of electrodynamics, theory of
relativity, electrocardiography and on philosophi-
cal problems of physics. Slepyan published four
books, more than fifty scientific papers and more

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Card 1/2

ROGINSKIY, V.Yu., dotsent, kand. tekhn.nauk

Sixtieth birthday of Professor Z. I. Model'. Izv. vys. ucheb. zav.:
radiotekh. 2 no.2:264 Mr-Apr '59. (MIRA 12:7)
(Model', Zinovii Iosifovich, 1899-)

ROGINSKIY, V.Yu.

Professor P.V. Shmakov. Zhur.tekh.fiz.26 no.3:702-705 Mr '56.
(Shmakov, Pavel Vasil'evich, 1885-)
(MLBA 9:7)